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THE "Seven Deadly Sins" OF CIVILIZATION

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"THE SEVEN DEADLY SINS" OF CIVILIZATION.

BY GEORGE M. GOULD. M.D., PHILADELPHIA, PA.



If we study the morbidity-rates and the mortality-rates of the recent years during which statistics are of any value, we are struck by the fact that despite the reductions in both, with consequent lengthening of the average life-length, the figures are still most unsatisfactory. Our vaunted civilization, if life is the most precious thing in the world, has not been very effective. It seems to be a most reckless squanderer and spendthrift of that life it supposedly exists to save. No medical man nor any philanthropist may seriously discuss the horrid sneer that there is anything of more value than lives and life. Much of civilization undoubtedly proceeds on the assumption that "money," "progress," politics, etc., are worth more than sacrificed lives, but it is precisely such civilization that good and honorable men are working to crush out. Civilization can rationally be viewed only as a tool or instrument. For what does it exist except for the civilized?

There is a big doubt creeping into the minds of careful students: Is the tool of such extravagant value? Is not something essentially and mightily wrong about the tool itself? Upon the economic side, democracy and trades-unionism are seeking to validate one sort of answer. From other standpoints, preventive medicine, charity and charity organizations, pedagogy, etc., are seeking other solutions. Medicine and preventive medicine has been able to do a great work, but it has been confined in very narrow limits as regards both time and kinds of diseases attacked; latterly indeed it has utterly lost its head over its success, and gone off into furious crazes over organic pathology, laboratory refinements, and a useless "science," which is mostly unscience, leaving the causes of the great ills afflicting humanity untouched and unholpen. The origins of most structural diseases lie in functional and habit abnormalisms, and of these the official pathology is incurious; it unconcernedly allows them to run riot, until the death may be foolishly ascribed to the organic diseases, which in reality are merely the executioners of the long-precedent functional diseases. In preparing the soil, also, for the infectious and structural diseases, the role of the functional and habit-diseases is immense, and more strangely

neglected. One way, however, of envisaging and studying the facts has been almost wholly unthought of—the historical. And of all the historical methods, I am unaware that the viewing to be described below has occurred to any writer. I can only roughly sketch the outlines, because I have not the knowledge required for the accuracy and fullness that are necessary in the undertaking.

In a word, light may be thrown upon the incidence of disease, and upon the genesis of many functional diseases and morbid habits, by a study and precisionalizing of the possible factors introduced by civilization. We are likely to forget that this civilization of ours is a very recent thing, of the last hundred years, let us say, in its effect upon millions, upon the masses of our people. And even in the last 25 years the activity of these possible new factors and habits has become amazingly intensified and generalized. The forces of uncivilization brought to our century a type of human organization fairly homogeneous and stable, which immediately became the subject of many wholly new foods, habits, conditions of life, etc. What are these novel factors of possible disease and morbid habits? Take, for instance:—

I.—TOBACCO.

Tobacco, of course, is an American invention, said to have been first found in Cuba in 1492, and used by the Spaniards in Yucatan in 1520. Sir John Hawkins brought it to England in 1565, and Sir Walter Raleigh and Sir Francis Drake took it home in 1586. It was manufactured, at first, in England, only for exportation,—an illustration at once of England's commercialism and of her conservatism. A proclamation was issued in 1584 against it, and the "Counterblaste against Tobacco" by King James I is well known. Duties of 6s 10d per pound were laid on it in 1614, and its cultivation was prohibited in England in 1684. Over in Ireland, Patrick was allowed his pipe or quid in 1789, but the opposition was so great that in 1832 an act was passed to buy the tobacco grown in Ireland and destroy it. The quantity consumed in England in 1791 was 9,500,000 pounds and in 1815 about 15,000,000 pounds. In 1850 the amount had risen to about 37,000,000 pounds, and in 1904 to about 83,000,000 pounds. Not until 1886 was permission given to grow the plant in England.

It is astonishing that since philosophizing began, even sensible men have fallen into the absurd delusion that the universality of a habit axiomatically argues for its beneficence and advisability. The custom has degenerated into an old saw that that which is everywhere practiced by everybody is right. It is quite on a par with "Whatever is is right," and vox populi, vox Dei, all of which mean that we like to find foolish excuses for doing the evil things we wish to do. Stephenson has even gone so far as to write:

"Lastly (and this is, perhaps, the Golden Rule), no woman should marry a teetotaler, or a man who does not smoke. It is not for nothing that this 'ignoble tabagie,' as Michelet calls it, spreads over all the world. Michelet rails against it because it renders you happy apart from work."

Did one not fear absolutes, general rules, universal laws, and all that, he might more sensibly conclude that a custom is pernicious just in proportion as it approaches universality.

According to estimates kindly made by the Commercial Museums of Philadelphia under the direction of Professor Wilson, the per capita and total consumptions of tobacco by the chief nations of the civilized world are as follows:

	Per Capita.	Total Consumption.
United States (1904) . . .	5.40 lbs.	440,000,000 lbs.
Germany (1903-4) . . .	3.44 lbs.	201,783,000 lbs.
Russia (1902)	1.10 lbs.	150,244,000 lbs.
France (1902)	2.10 lbs.	84,393,000 lbs.
United K'gd'm (1904) . . .	1.95 lbs.	83,378,000 lbs.
Austria (1902)	3.02 lbs.	78,755,000 lbs.
Hungary (1903)	2.42 lbs.	47,905,000 lbs.
Belgium (1904)	6.21 lbs.	44,273,000 lbs.
Italy (1902)	1.05 lbs.	34,549,000 lbs.
Canada (1904)	2.74 lbs.	15,400,000 lbs.

It must be remembered that these figures of several years ago do not exhibit the great increases in the consumption that have been taking place, and that in some countries are now proceeding at a more rapid rate.

Effects of Tobacco.

The fact which blocks all accurate investigation of the problem as to the effect of tobacco upon health, disease, and mortality is our nearly utter ignorance of the effect of small, repetitive and continuous doses of this powerful and much-used drug. There is no "science" whatever concerning the results of the habit to be found in the text-books on *Materia Medica* or in medical literature. And yet what physician observant of himself and his patients doubts that it is often, perhaps always, a pathogenetic factor,

puzzling, contradictory, mysterious, as it may be? Each individual's limits and reactions differ, but it is evident that limits and reactions exist in every case, and are carefully watched and guarded by many. The relation to digestion is certain; the effect in organic disease of the eyes is indubitable, and every careful physician has in his mind the use and abuse (how impossible to separate!) in his questionings of patients. But until pharmacology and science attack the problem in a serious and thoroughgoing way, the injurious influence of continued and repeated doses of tobacco upon the health of civilized people will be only a guess. An investigation incited by some scientific philanthropist, institute, or laboratory would be of incalculable service both to science and to humanity.

A French physician* has studied chiefly historically the effect of tobacco-poisoning, and another† has found that general paralysis, tabes, encephalitis, hypochondriasis, muscular atrophy, etc., may be caused in this way. Solly‡ believes that the reproductive powers are extinguished by it. In the *Medical News* of August 26, 1905, Dr. Robbins of New York reports two clear cases of nicotine-poisoning. The reduction of the normal quantity of free hydrochloric acid in the gastric juice seems probably due to tobacco.

For a period of eight years, it is said, the senior class of Yale College were carefully examined to determine, if possible, the question of the physical effect of tobacco smoking. It was found that those who did not use tobacco were twenty percent taller than the smokers, twenty-five percent heavier, and possessed sixty-six percent more lung capacity. Probably the best epitome of professional opinion is that gathered in *The Practitioner*, Vol. LXXV, No. 1. Nothing new or decisive is reached as a result, and the editor, in summarizing the discussion, takes the customary standpoint that abuse, of course, may be due to the habit, that the custom of smoking by boys is wrong, but not sufficiently so to warrant any control by law. Fun is, indeed, poked at the "faddists" who are seeking to control the abuse both in this country and in England. Everyone is to judge for himself, and the spirit of the editorial principle of *laissez faire* is shown by the quoted jingle:

Cats may have their goose
Cooked by tobacco juice;
Still, why deny its use
Thoughtfully taken.

Now, doubtless, professional opinion as re-

*Foussard, *De L'Empoisonnement par la nicotine et le tabac*, Paris 1876.
†Druhen, *Du Tabac*, etc., Besancon, 1867.
‡The *Lancet*, 1857.

gards the use both of alcohol and tobacco has been often dictated by the personal habits of many medical writers. The purely scientific or clinical facts, moreover, are hard to get at. The question is not as to the physiologic and single dose nor the very moderate use, but relates to the persistent use, the long continued habit, and the effects of overuse and abuse. No data are at hand to determine such questions, and the matter thus comes down to the attention of careful clinical observers, the collection of isolated cases and facts, and attention spread over many years by exceptionally shrewd men, both patients and physicians. There is an old story which illustrates too well the attitude of some physicians:—strict rules as to diet, etc., were laid down to the poor patient by the grand medical adviser, ending with a stern command, “and one cigar after each meal!” In a week the woe-begone sufferer returned worse than ever, saying: “I have carried out your orders, doctor, accurately, in everything except as regards tobacco. I have never smoked before this and every time I try to smoke as you said, after each meal, I become sick as death, vomit, and it takes 24 hours to recover; I cannot do it!”

Habitual and Excessive Smoking.

All agree that habitual smoking, and especially of cigarets, by boys, is most injurious; it is a fact which should give pause to the easy-going advisers. If harmful to the young, why not to those who are older, particularly if carried to excess? At least a new clinical law is suggested as to the action of drugs on the young and upon older patients. Again, if tobacco is not harmful to men, why should women be excluded from the supposed harmlessness and admitted pleasure of smoking? Some other principle than an esthetic or social one must be allowed to obtain, and one must begin the study of the action of drugs on the male as contrasted with the female organism. The morbid effect of much smoking on special organs, the eye especially, the tongue and throat, etc., and frequently upon other tissues and functions, is frankly admitted. It is in the observation of every experienced physician that smoking often has a speedy and decided effect upon the appetite, digestion, etc. A study of idiosyncrasy and the different effects in individuals is evidently highly desired, and above all, the cumulative results of long habits and excess. What is excess? Surely ten cigars or pipefuls a day is excess, and is bound to produce disease. Just as surely hundreds of thousands of Americans are smoking to excess. But excess in individual cases may be only three cigars, or even one, a

day. Who has sought to determine the conditions and signs of the physiologic dose when habit or slow absorption and subtle effects are sought?

New factors are also coming into play, e. g., the qualities and morbidity-producing conditions of tobacco from different countries, and from different grounds, even from different factories. The rage for luxury and show is modifying the growing of tobacco and manufacture of cigars, and proceeding to such lengths that cigars, enormous in size, and powerful in effects, are “sporting,” cigars which cost from 25 cents to a dollar or more each; and is it sure that these expensive cigars contain no drug except pure tobacco? It has come to my personal knowledge that cases of severe although mysterious diseases and ill-health have existed in which smoking was finally demonstrated to be the source of the mischief, after all other theories and diagnoses had been proved false. The whole subject needs a rigorously scientific investigation. In the meantime busy physicians should be constantly on guard not to overlook tobacco as an unsuspected cause of great mischief.

II.—COFFEE AND TEA.

According to a Chinese legend, tea was brought into China from India about 500 A. D. The plant has been found wild only in Assam. Tea was brought to Europe by the Dutch in 1610, and in 1657 it sold in England for \$30 or \$50 a pound. Pepys drank his first “cup of tea” in 1660. In 1728 the prices were from \$3 to \$6 per pound. Americans had something to say about tea in 1773 when 17 chests were destroyed in New York and 340 in Boston, not wholly for hygienic reasons! In 1830 about 22,000,000 pounds were consumed in the civilized world, exclusive of England, which used about 30,000,000 more. In 1904 the English imported 256,000,000 pounds. The coffee tree was conveyed from Mocha to Holland about 1616, and to the West Indies in 1726. Coffee was brought to England in 1641, the first coffee-house was opened in Oxford in 1650, the first in London in 1652. Coffee-houses were suppressed, for only a short time, in 1675.

Just as the recent cheapening and ease of transportation has enabled the entire world to get tobacco, so it is with coffee and tea. The figures, approximately, are as follows:

Coffee.

	Per Capita.	Total Consumption.
United K'd'm (1904)	.671 lbs.	28,783,000 lbs.
Germany (1904)	6.63 lbs.	396,205,000 lbs.
Holland (1903)	14.39 lbs.	78,164,000 lbs.
Belgium (1904)	17.81 lbs.	125,996,000 lbs.

France (1903)	6.27	lbs.	245,599,000	lbs.
Austria-H'g'y (1902).	2.05	lbs.	99,207,000	lbs.
United States (1904).	11.75	lbs.	960,879,000	lbs.
Australia (1900)	.58	lbs.	2,154,000	lbs.
New Zealand (1900).	.27	lbs.	204,000	lbs.
Canada (1903)	1.22	lbs.	6,765,000	lbs.

Tea.				
	Per	Total		
	Capita.	Consumption.		
Un'ed Kd. (1904)	6.00	lbs.	256,660,000	lbs.
Rus'n E'p. (1903)	.95	lbs.	132,256,000	lbs.
Ger'n Em. (1904)	.12	lbs.	6,903,000	lbs.
Holland (1904)	1.59	lbs.	8,778,000	lbs.
France (1903)	.06	lbs.	2,245,000	lbs.
U'd States (1904)	1.34	lbs.	109,623,000	lbs.
Australia (1904)	6.93	lbs.	23,837,000	lbs. (1903)
New Ze'l'd (1903)	6.29	lbs.	5,233,000	lbs.
Canada (1904)	5.60	lbs.	23,969,000	lbs. (1903)

The chief chemical constituent is the same in both coffee and tea, and the physiologic effects of their use also much the same, is further borne out by the two tables which complement each other closely. The less coffee, the more tea, or vice versa, is a fairly accurate statement. It is impossible to say just what number of pounds of average coffee is equal, as a physiologic dose, to one pound of the average tea. Therefore adding together the per capita consumption of both is inaccurate. If we roughly estimate that there is 0.66 2-3 percent of caffen (or thein) in a pound of coffee and 2.5 percent in a pound of tea, we may as indefinitely reckon that the total per capita consumption of caffen in both coffee drinking and tea drinking to be as follows:

Total Per Capita Consumption Caffen.	
United Kingdom	.154 lbs.
Germany	.047 lbs.
Holland	.135 lbs.
France	.043 lbs.
United States	.112 lbs.
Australia	.177 lbs.
New Zealand	.161 lbs.
Canada	.148 lbs.

Because many adult drinkers consume several times the average per capita consumption, it follows that considerable numbers of large drinkers of tea and coffee may be consuming enormous amounts of caffen annually. A valuable inquiry would concern the reasons why come nations use so much more than others. To get more closely to the heart of the problem would be an investigation as to the existence of a greater percentage of certain diseases in the countries using several times more caffen than others.

The consumption of coffee is rapidly increasing. In the United States, Germany, Holland, United Kingdom, Belgium, France, and Austria-Hungary the combined consumption has increased about 60 percent, from 1,140,740,000

pounds in 1884, to 1,816,447,000 pounds in 1904, while the relative increase of population has been only about 30 percent in the same period. In our country the consumption has almost doubled in the same time, and, roughly speaking, we consume one-half the product of the entire world, at the last estimate, about 14 pounds per capita.

Physiologic Effects.

There is, of course, some difference between the physiologic effects of tea and those of coffee, but with the exception of the tannin and its effects upon the digestional system, both have, in general, not widely dissimilar consequences. An English physieian, Dr. John H. Clarke, says: "Persons addicted to tea do not always drink it; cases occur in which the tea habitue eats it. In one case of this kind, the victim, a woman who ate quantities of tea, actually developed delirium tremens. This, though an exceptional occurrence, shows the power of the drug over the nervous system and, of course, it is just for its stimulating power that tea is taken. Many people do not understand how it is that they have such an appetite for tea, when they have little or no care for any other meal—if we except the morning cup of tea brought up to the bedroom, without which they would never get up at all.

The reason is this: The sinking, empty feeling, accompanied often by irritability, low spirits, and shortness of temper, means that the stimulating effect of the last dose of tea is passing off, and the stage of reaction setting in. It is just the same with the tea drinker as it is with the alcohol drinker, when the effect of the last dram is passing off another must be taken to keep up the stimulating effect. Thus the vicious circle is kept up. And what is the effect of it? The effect is an increased wear and tear on the nervous system. Tea belongs to a group of nerve stimulants, of which erythroxyton coea (the source of cocain) coffee, and cocoa, are also members, which enable a person to get more out of himself in the shape of mental or bodily energy than he would be able to get without them. This is drawing a bill on the bank of his nervous system, of course, and the bill will have to be met. If the emergency is a passing one, the bill will be met by food and rest, and no great harm will be done. But this is not the usual case, and when once a habit is established, an abnormal rate of wear and tear will go on, and this results in a fruitful erop of cases of that latter day fashionable complaint—neurasthenia.

These observations are for some countries and

individual cases generally, as true as they are important. It is very desirable that the insidious ill-effects which may be produced by over-indulgence in an intoxicant of such world-wide distribution and relative unobtrusive properties, should be kept prominently in the public eye. The same may be said of coffee."

Constitutional Effects.

Dr. Clarke further urges as to the constitutional damage effected in many directions by tea drinking: "Allied to neurasthenia, and nearly always associated with it, is dyspepsia of the nervous or flatulent type. Tea can produce any one of these and all combined. Another effect of tea is to produce anemia. Servant girls especially are great tea drinkers, and drinkers of the strongest kind of tea. To this habit much of the anemia and dyspepsia from which they suffer is due. Tea contains not only thein—the active principle which has the stimulating effect on the nerves—but also much tannin. It is owing to this latter that much of its indigestion-causing properties are due. "High teas" are a digestive atrocity. Tea turns meat into leather; and all who are not equal to digesting leather should carefully avoid this mixture. The cheaper teas, so much in use now—those which give the people "the most for their money"—contain the most tannin. A tea taster informs me that if the infusion of these teas is left in the tasting cups for any time it will eat off the enamel; from which it is easy to understand the effect the infusion produces on the human stomach."

Again, as with tobacco, there is no scientific knowledge of the direct, indirect, and remote effects of small and continuously repeated doses of coffee, or caffeine, upon the human system. And, rivalling tobacco, and alcohol, and sugar, in the enormous amounts consumed, and the far greater universality of the consumption (women and even children sharing), the lack of scientific knowledge becomes even more striking.

The "coffee-heart" is well-known by medical men, and the sacrifices that soldiers, "neurasthenics," etc., will make of food and other necessities or comforts to obtain coffee makes one wonder whither we are trending. The number of people who are satisfying, or cheating, or abnormalizing their systems with coffee (or tea)—without food, practically, for breakfast, with strong coffee in its place—also provokes, or should provoke scientific study by hygienists. It is claimed that tea and coffee are becoming rivals of alcohol as pathogenetic factors. Tea-drunkenness and coffee-drunkenness are becoming increasingly recognized as such.

III.—ALCOHOL.

Although the drinking of alcoholic liquors and although even drunkenness was not known in ancient and medieval times, it is only in the last few hundred years that the stronger alcoholic drinks have become habitually used by the great mass of people. The latest figures obtainable are as follows:

Consumption of Spirits, Wines and Malt Liquors.

	Total Consumption Gallons.	Per Capita Gallons.
United States (1904)....	1,494,191,325	18.28
United Kingdom (1900).. <td>1,500,709,000</td> <td>35.42</td>	1,500,709,000	35.42
France (1903)	289,103,000	7.41
Germany (1903-4)	1,782,778,000	30.77
Russia (1902)	149,451,000	1.08
Italy (1903)	6,726,000	.20
Austria (1902)	492,043,000	18.42
Hungary (1903)	38,383,000	1.93

Whisky, Brandy and Other Distilled Spirits.

	Total Consumption Proof Gals.	Per Capita Gallons.
United States (1904)....	121,101,997	1.48
United Kingdom (1900)..	58,318,400	1.38
France (1903)	72,324,600	1.85
Germany (1903-4)	124,313,300	2.11
Russia (1902)	174,031,000	1.26
Italy (1903)	11,150,400	.34
Austria (1902)	82,526,700	3.09
Hungary (1903)	43,588,000	2.19
	Gallons.	Gallons.
United States (1904)....	43,316,636	0.53
United Kingdom (1900)..	16,646,900	0.39
France (1903)	1,342,830,600	34.73
Germany (1904)	124,408,000	2.08
Spain (1903)	331,584,000	17.82
Italy (1903)	928,531,000	28.06
Austria (1903)	156,362,000	5.85
Hungary (1903)	74,628,000	3.75
Portugal (1903)	71,854,000	14.12

The pathologic evils, hepatic cirrhosis, the sclerosis, etc., are now so well recognized as the results of chronic alcoholism that it is unnecessary to go into the details.

"Hospital physicians of experience," says an authority, "will state that directly or indirectly, alcohol is responsible for over 50 percent of the diseased conditions that they meet with in the wards. Coroners in large cities only know too well that the cases of suicide, murder, and other criminal acts that they are called upon to investigate show in the majority of instances a perverted mentality due to alcoholic influence. Police courts, asylums, and destitution generally speak all loudly of the curse of alcohol in some shape or form." Of course, it is the experience of all of us that these statements are substantially true.

ing that these morbid agencies add one more to the great degenerative forces which have come into and upon those we are studying, and which are profoundly permeating and modifying what we call civilization.

As a powerful factor in social devolution, personal and family degeneracy, and in producing the needlessly high morbidity and mortality rates, the role of alcohol is understood, acknowledged and deplored. The scientific status is also far better known, and has reached such a degree of accuracy and recognition that the world is becoming aroused to the magnitude of the evil. The efforts to withstand and conquer it, however, are almost unavailing. While alcohol drunkenness may be decreasing somewhat "steady drinking"—a worse evil—is increasing in many or most countries, and is the real problem which preventive medicine and public hygiene should take in hand.

IV. SUGAR.

Sugar, according to Strabo, was found 325 B. C., in the East Indies. It was prescribed as a medicine by Galen in the second century. It was brought into Europe from Asia in 625 A. D., but how little of it was used may be seen from the fact that at the breaking up of the Roman Empire candy sellers carried it through Europe upon their backs, to retail to children, young or old. The cultivation of the sugar cane was attempted in Italy, but without success. The Spaniards and Portuguese carried it to America about 1510. In 1546 is the first record of sale of sugar in England, and it was first taxed in 1685 by King James II, although sugar refining was introduced somewhat earlier. The vacuum pan was invented by Howard about 1850. The new sugar imported into Great Britain in 1853 was 7,284,290 cwts., in 1893, 16,032,113 cwts. Beetroot sugar was first made in 1747, and by 1800 was somewhat largely used in France, but in England only in 1884. American sorghum came into use in 1888.

The latest statistics are again too many years back to give us what we most desire, but here are those obtainable:

	Per Capita Consumption.
United States, 1904	75.3 pounds
United Kingdom, 1902-3	90.0 pounds
Switzerland, 1902-3	63.0 pounds
Denmark, 1902-3	52.0 pounds
Russia, 1902-3	11.0 pounds
Austria, 1902-3	18.0 pounds
Belgium, 1902-3	22.0 pounds
France, 1902-3	24.0 pounds
Germany, 1902-3	28.0 pounds
Holland, 1902-3	31.0 pounds
Spain, 1902-3	11.0 pounds
Italy, 1902-3	7.0 pounds

One cannot help thinking that the figures as regards the consumption of sugar in the United States are erroneously low. Surely we are using more sugar than any people in the world. The food in millions of families is, much of it, almost saturated and syrupy, while cake and sugar-laden pastry is eaten by all. The number of candy stores, bonbon counters, "soda water" fountains, etc., in all cities and villages, is amazing; and every "sweetheart" must be sweet indeed if her system does not, as it cannot, burn the enormous quantities of sugar she and her lover load into her stomach. With great physical activity the normal system may take care of, and even profit by, large quantities of cane sugar, but surely not the inactive, dyspeptic, "neurasthenic" or "nervous" one. As commonly used, to excess, and without muscular activity, because of it we are certainly breeding many functional diseases, various forms and types of nutritional disorders, etc. How long these precede the inevitable stage of glycosuria, no one knows; and as little knows how many cases of glycosuria exist in the community. Despite a few scientific attempts at investigation, we have no thorough going knowledge to form a basis for law, hygiene, or medical advice. And we shall not know until the old decadent and antiquated organic pathology of functional diseases is abrogated and until the systematic periodic medical examinations of "the well," as I have suggested, are taken up by institutions and by government. If the great life insurance companies had done their duty by their members, or if they would undertake it now, in a united investigation, we might come to have a body of opinion of increasing certitude and value. In the meantime laboratory slides may vie with "politics" in hunger for "pork" "dough," and class legislation, while disease goes on killing those thus misrepresented.

V. VENEREAL DISEASES.

One does not need to accept the probably true theory that syphilis was brought to Europe by the Columbian sailors from the West Indies, to accept the more certain truth of the growing influence of the venereal diseases in keeping high the morbidity and mortality figures of the tables of vital statistics. Nor must one accept the estimates of some gynecologists, surgeons, and writers that from fifty to eighty percent of our people are suffering from venereal diseases. Appalling as that would be, it is not necessary in order to recognize the terrible havoc they are playing with human life, and how they are enormously handicapping the evolution of better social and hygienic conditions. All that may be done here is to "look and pass on," remember-

The registrar general's returns of mortality from syphilis cannot be relied on, for in but few cases of death ultimately due to this cause does the same appear on the death certificate. For instance, in Ireland, in the year 1903, out of 77,358 deaths registered, in only 104 is the cause given as syphilis, and in 14 as gonorrhea. The figures obviously bear no relation to the actual facts. With regard to the extent to which venereal diseases exist in the living population, it is just as difficult to form an estimate, and the estimates that have been made are more or less guesses depending on individual experiences. Sir William Gowers is reported to have given his opinion that there are half a million people in London alone who have contracted syphilis. There are said to be 150,000 syphilitics in Berlin and 225,000 in New York, while in France one out of every seven people is said to have the disease. Figures based on admissions to the army can obviously not be taken as representative of the conditions of the general population, since in different countries the army is recruited from quite different classes of the population. Nevertheless, such figures are instructive, though they show a very wide variability, reaching the highest figure among British recruits and the lowest among German. Out of every 1,000 admitted to the following armies the rates for gonorrhea and syphilis were, respectively: Germany, 27 and 5.5; Russia, 36 and 13; France, 40 and 9; United States, 73 and 16.8; and Great Britain, 173 and 101. We still seem as far as ever from devising any practical means of preventing the spread of these diseases.

VI. THE MODERN HOUSE.

Of all the agents so far listed, the cheapening and general use of glass windows appears to be the most prolific and profoundly acting cause of both the goods and evils of civilization. And this has arrived at precisely the same historical period in which the effects of tobacco, coffee, tea, alcohol, sugar, venereal diseases, etc., have come upon the modern civilized human organism. Without a room warmed so as to be comfortable, and lit so one could read and write, there could not have arisen the intellectual and literary development which is the fundamental characteristic of the modern civilization of the temperate and northern nations. That warming and lighting could only be with the glass windows customary during the last 100 years. Although the Egyptians and Syrians are said to have known how to make glass long before the Christian era, it was not much used even during the first Chris-

tian centuries, except by a few rich Romans. Glass windows were found in the ruins of Pompeii, and some glass was brought to England as early as the seventh century, but the manufacture of glass was not established in England until 1557. The few windows in use by the rich were still personal property, not belonging to the house or transmitted to the heir with it. The caul of a calf, linen cloth oiled to make it somewhat transparent, thin pieces of wood for part of the panes, some of the others being of bits of glass—these and similar devices were those resorted to. They were intermediate, in the late middle ages, between the time when the "hall" was a black windowless, cave-like space, and that of our day when the window shuts out the cold and lets in the light. How recent was this barbarism is shown by the fact that the window tax was repealed only in 1851. The duties on glass were repealed by England only in 1845. The manufacture of British sheet glass was introduced in England in 1832.

But with this general usage came the progress of architecture, artificial and chimneyless heating, which made practically air-tight houses, and the "house diseases" which while they do not cause so much personal suffering as other classes of diseases, are still the chief executioners (if not the causes), which sign the death warrant in the mortality tables. Many other infectious diseases are permitted because of bad ventilation and filth of houses, but tuberculosis and pneumonia, which cause one-third of the deaths, are, as all acknowledge, simply house diseases—they exist, because the modern, windowed and air-tight, ill-ventilated, and dirty house exists. City life at its best is bad for children, involving as it does, early puberty, exciting distraction, superficiality of knowledge, insufficient repose, and the want of soothing influence that the country affords; and at its worst, when it means a tight squeeze in squalid dwellings, poor food, foul air, contact with vice and manifold temptations, it is utterly demoralizing. It seems obvious that, if the city goes on growing at the nineteenth century rate, and under nineteenth century conditions, it will dry up the reservoirs of strength in the population and leave an immense proletariat of inferior quality and without commanders.

VII. EYESTRAIN.

The reasons why eyestrain is the greatest of these evils are many, the chief being:

1. Because of its almost universal existence, the majority of people in our life being subject to it in varying degrees.

2. Because it is almost impossible for nature to make the human eyeball without little or much imperfection of shape (astigmatism, hyperopia, myopia), so its functioning becomes necessarily malfunction or pathogenic.

3. Because civilization compels near-work of the eyes (reading, writing, sewing, handicrafts, machinery, etc.), by so large a majority, for so many hours a day; for this the mechanism of the "accommodation" was not created, nor much used prior to very modern times. Continuous innervation of a muscle, or its too constant contraction, is impossible and produces disease; when, as in the case of complicating astigmatism, etc., the too long and too severe contraction becomes otherwise abnormal and unequal, then the pathogenic action becomes extreme.

4. Because as no other sense organ the eye is the *conditio sine qua non* of motility and development of all the higher organisms. The essential structure of the eye, the retina, is embryologically brain substance. The brain comes out to see. And every activity of the body depends upon precedent and governing vision. Intellect itself is fundamentally and initially visual.

Morbid vision is therefore the great cause of the exclusion of the unfit in evolutionary history, and the natural selection or survival of the fit has consisted in large part of the survival of the ocularly fit. And eyestrain therefore while not suddenly or directly killing, produces more widespread and varying morbid function of the organism, more suffering, than any other cause enumerated.

The age at which all of the foregoing provokers of disease exercise their chief and greatest power varies. If we make a demarcation line at, say 16 years, we find that the per capita users of tobacco, coffee and tea, and alcohol, consume one-third more than the figures given, because, as a rule, under 16 those few addicted to the habits will be offset by adults who are non-users. Unless inherited and innocently acquired the children of occidental nations are rarely afflicted with venereal disease. But counterbalancing these lucky escapes, children are as addicted to the overuse of sugar as grownups. While suffering from house diseases less severely, they are, in these schoolhouse times, as great sufferers from eyestrain.* Especially the beginnings in the

total population of the awful twenty-seven per cent of cases of lateral curvature of the spine (mostly due to eyes, directly or indirectly) are during the school years under 14. Eyestrain, indeed, is the only cause which is operative from the age of two to death in most, and in all of those of 45 and over.

Sex, of course, is also a contributing factor. If we guess that those men who do not use tobacco equal the few women (smokers, snuff-takers, "rubbers," etc.) who do use it, it is evident, that the per capita amounts of the actual users as tabled, must be doubled. It is much the same with alcohol. As to the other five items the question of sex is less determinant, although women, living in houses more than men, with much sewing, reading, etc., are more subject to eyestrain reflexes than men.

Variations in the amount of tobacco, etc., used by different persons should always be kept in mind. Many must consume enormous amounts in order to bring up the per capita average of those who do not use it or but little. There is at least one man in the United States who drinks over a gallon of whiskey a day. Some women eat little else but candy or sugared food, or drink enormous quantities of tea, while many men are under the influence of strong coffee all the time. There is a striking parallelism between the per capita consumption of tobacco and that of coffee and tea; and others are evident. Such broad outlines kept in mind by the clinician, and by hygienists and legislators will help all towards a sounder judgment as to diagnosis, reforms, and the framing of uplifting laws.

Special, less powerful, and less universally acting sources of mischief may not be wholly omitted from view, as I have been compelled to ignore them—such are the evils from injurious trades and occupations; corrupt politics; adulteration of foods and drugs; crime; cocaineomania, etc.; plutocracy; evil trade unionism, urbanization, etc.

On the other hand are the compensations that civilization has so manifestly and beneficently brought as counterweighing—the abolition of smallpox, and of plagues, and the control of some of the other infectious diseases; the growth of the habit of personal cleanliness—not a person took a bath in all Europe, says Michelet, for a thousand years; the widening of city and town streets; the abolition of famines by means of intercommunication, better governments, etc., the abolition of slavery; agricultural extension and reform; better clothing, food, heating of houses,

*I have not included in the list the common school, which is indirectly the source of many civilized evils and diseases because it is only indirectly the source. Almost all the baneful results of the school system are due to eye strain. The greater the number of school hours demanded, the greater the degree and the more baneful the results of eye strain, the greater the number of suicides, etc.

etc.; printing and common schools, and not to be forgotten; the correction of ametropia by spectacle lenses.

Thus at the beginning of the modern epoch of what we now characterize as civilization, we find that the men and women constituting its elements have had thrust upon them seven almost wholly new, universally acting, and powerful agencies of evil, all still rapidly increasing in intensity. These agencies, moreover, are in varying degrees disease-producing—some wholly so, some largely so, none not so. The point of view which illuminates is that which fixes them as combined in action, historically of sudden incidence, of universal operation, and of startling ingravescence; luxury is the fertilizer which stimulates the alarming exuberance of their growth and gives them their great destructive power.

One limiting and modifying condition should not be omitted: The process of putting people, or of their coming under the action of "the seven deadly sins" of civilization mentioned, is still going on with millions, and is more sudden than it ever was. We in the United States know this well by experience, for the immigrants find themselves in a week transplanted from Medievalism, and subject to the action of the seven malevolent influences acting conjointly and directly.

None knows, none has more than a hint, of the definite and detailed diseases which are caused or increased by some of the seven causes mentioned. That two, three, or even all the seven, act as if in malevolent conspiracy is manifest. One alone, the unventilated insanitary house, accounts for most of the tuberculosis and pneumonia in the world; a too highly saccharinized diet is surely producing many diseases of nutrition, and especially diabetes; knowledge of the evil results of alcohol and of venereal disease is growing rapidly. Official medicine and ophthalmology still cry, *exaggeration*, as regards the awful wreckage of human lives from eyestrain, which we are only beginning to find out and which has surely not so far been exaggerated. Some medical philosopher, some genuine scientist, will come, by and by, and, by this historic method, coupled with clinical acumen, he will explain the mysterious rise and increase of many diseases, such, e. g., as nephritis, insanity, epilepsy, many types of nervous and mental diseases, a number of surgical and gynecological ones, and many of denutrition, "dyspepsia," so-called "neurasthenia," etc. But after these "typical," or nameable mysteries have been

solved there will remain the vastly larger, usually functional, abnormalisms, which are individual and ever unique in their clinical manifestations; and these may only be explained as due to the hitherto unsuspected action of one, or the interaction of two or more, of the seven evils enumerated, all so intimately and universally bound up with modern civilized methods and habits of living.

Vital Statistic.

Increase or decrease of the death rates of the terminal diseases? There are no statistics which are reliable, or which extend over sufficient lengths of time to be of use to us. If we are able to approach the question from this side we might have some suggestive and confirmatory inductions of value. But as to this one might say that even were it possible to have such accountings made they would be of small value, because, first, the causes now given as those of death, as we all know, are misleading and fallacious. What physician puts down **venereal disease** as the cause of death on the certificate? Or drunkenness? Or suicide? And how often the certain cause is really unknown. "He just quit breathin'," would, for all, be quite as illuminating as the tables usually are. Secondly, the ascription of the cause of death to the different customary terminal diseases is so fallacious as to amount to positive and wholesale deception. This is because the terminal diseases are not the true causes or reasons of death; they are only the last conditions preceding it, and the true causes lie back in the uninvestigated years, and the precedent functional disorders about which there is no curiosity. As well charge the sheriff with the cause of crimes and capital punishments, because he jails or kills the criminals. With us the deaths are said to be increasing caused by nephritis, apoplexy, cancer, diabetes, appendicitis, while those caused by senility, bronchitis, convulsions, paralysis, peritonitis, and scarlet fever are decreasing. As to the others it is doubtful whether there is decrease or increase. Of more certitude, and of infinitely more value are the enormously significant increase of many nervous and mental diseases such as insanity, epilepsy, headache, "neurasthenia," etc., together with lateral spinal curvature, digestional disorders, suicide and the rest. But these things do not interest the medical philosopher and pathologist. To investigate them, Steel, or Standard Oil, governed by "leading" physicians, do not found laboratories. These diseases do not kill, not even suicide does that, sufficiently to arouse the curiosity of the pathologic pathologist.

